

Appl. No. 09/746,676

Attorney Docket: 042390.P10141

**LISTING OF THE CLAIMS:**

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1 1: (Previously Presented) An apparatus which comprises:
  - 2 a multi-core processor and
  - 3 at least one test control mechanism, including at least one test access port controller
  - 4 (TAPC) and a plurality of distributed data and control registers;
  - 5 said multi-core processor and said test control mechanism having a configuration so as to
  - 6 allow testing of said multi-core processor.
- 1 2: (original) The apparatus of claim 1, wherein said multi-core processor comprises at least two
- 2 processor cores and at least one circuit comprising non-processor core logic.
- 1 3: (original) The apparatus of claim 2, wherein said multi-core processor and said test control
- 2 mechanism having a configuration so as to allow testing of at least two processor cores of said
- 3 multi-core processor.
- 1 4: (Previously Presented) The apparatus of claim 2, wherein said plurality of distributed data and
- 2 control registers are located both within said at least two processor cores and within said at least
- 3 one circuit comprising non-core logic.
- 1 5: (original) The apparatus of claim 4, wherein said at least one test control mechanism is
- 2 substantially compliant with the IEEE 1149.1 specification.

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1 6: (original) The apparatus of claim 4, wherein said at least one test access port controller  
2 (TAPC) is located within said at least two processor cores.

1 7: (original) The apparatus of claim 4, wherein said at least one test access port controller  
2 (TAPC) and at least one of said plurality of distributed data and control registers are coupled via  
3 an Integrated Test Bus (ITB).

1 8: (original) The apparatus of claim 4, wherein said distributed test control mechanism is  
2 controllable, at least in part, by one of said at least one test access port controller (TAPC).

1 9: (Previously Presented) The apparatus of claim 8, wherein which one of said at least one test  
2 access port controllers (TAPCs) controls said distributed test control mechanism is dynamically  
3 selectable during operation.

1 10: (original) The apparatus of claim 2, wherein at least one of the said at least two processor  
2 cores comprises one test access port (TAP) which includes one test access port controller  
3 (TAPC), and a plurality of distributed data and control registers.

1 11: (original) The apparatus of claim 10, wherein said test control mechanism and said at least  
2 two processor cores are coupled so as to provide multiple coupling arrangements, said multiple  
3 coupling arrangements being dynamically selectable during operation.

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1 12: (original) The apparatus of claim 11, wherein said multiple coupling arrangements are  
2 selected from a group consisting essentially of coupling said test access ports substantially in  
3 series, coupling said test access ports substantially in parallel and coupling said test access ports  
4 for substantially independent operation.

1 13: (original) The apparatus of claim 10, wherein said at least one test control mechanism is  
2 arranged to allow at least one of said at least two processor cores' said one test access port (TAP)  
3 to be externally visible from said multi-core processor.

1 14: (original) The apparatus of claim 13, wherein said at least one test control mechanism is  
2 arranged to allow only one of said at least two processor cores' said one test access port (TAP) to  
3 be externally visible from said multi-core processor.

1 15: (original) The apparatus of claim 13, wherein said at least one test control mechanism is  
2 arranged to allow the selection of which at least one of said at least two processor cores' said one  
3 test access port (TAP) is externally visible from said multi-core processor to occur dynamically.

1 16: (original) The apparatus of claim 10, wherein said at least one test control mechanism is  
2 coupled to produce during operation an error signal if the output signals of said at least two  
3 processor cores' said one test access port (TAP) are not substantially equivalent.

1 17: (original) The apparatus of claim 2, wherein said at least one test control mechanism, said at  
2 least one processor core and said at least one circuit comprising non-processor core logic are

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3 further coupled so as to allow testing of said at least one circuit comprising non-processor core  
4 logic.

1 18: (Previously Presented) A system which comprises:  
2 a computing platform, including:  
3 a memory to store instructions;  
4 a multi-core processor to process instructions which includes:  
5 a plurality of processor cores;  
6 at least one circuit comprising non-processor core logic and  
7 a test control mechanism, including at least one test access port controller  
8 (TAPC) and a plurality of distributed data and control registers;  
9 said multi-core processor and said test control mechanism having a configuration so as to  
10 allow testing of said plurality of processor cores.

1 19: (Previously Presented) The system of claim 18, wherein said multi-core processor and said  
2 test control mechanism are capable of allowing testing of said at least one circuit comprising  
3 non-processor core logic.

1 20: (Previously Presented) The system of claim 18, wherein said plurality of distributed data and  
2 control registers are located both within said plurality of processor cores and within said at least  
3 one circuit comprising non-core logic.

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- 1 21: (original) The system of claim 20, wherein said at least one test control mechanism is  
2 substantially compliant with the IEEE 1149.1 specification.
- 1 22: (original) The system of claim 20, wherein said at least one test access port controller  
2 (TAPC) is located within said plurality of two processor cores.
- 1 23: (original) The system of claim 20, wherein said at least one test access port controller  
2 (TAPC) and at least one of said a plurality of distributed data and control registers are coupled  
3 via an Integrated Test Bus (ITB).
- 1 24: (original) The system of claim 20, wherein said distributed test control mechanism is  
2 controlled, at least in part, by one of said at least one test access port controller (TAPC).
- 1 25: (Previously Presented) The system of claim 24, wherein which one of said at least one test  
2 access port controllers (TAPCs) controls said distributed test control mechanism is be  
3 dynamically selected during operation.
- 1 26: (original) The system of claim 18, wherein each of the said at least two processor cores  
2 comprises one test access port (TAP) which includes one test access port controller (TAPC), and  
3 a plurality of distributed data and control registers.

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1 27: (original) The system of claim 26, wherein said test control mechanism and said at least two  
2 processor cores are coupled so as to provide multiple coupling arrangements, said multiple  
3 coupling arrangements being dynamically selected during operation.

1 28: (original) The system of claim 27, wherein said multiple coupling configurations are  
2 selected from a group consisting essentially of coupling said test access ports substantially in  
3 series, coupling said test access ports substantially in parallel, and coupling said test access ports  
4 for substantially independent operation.

1 29: (original) The system of claim 26, wherein said test control mechanism is coupled to  
2 produce, during operation, a signal that indicates whether the output signals of said at least two  
3 processor cores' said one test access port (TAP) are equivalent or substantially equivalent.

1 30: (original) A method, comprising:  
2 providing an indicator to identify a desired testing option;  
3 based upon said desired testing option, dynamically routing signals between a plurality  
4 test access ports (TAPs);  
5 wherein said plurality test access ports (TAPs) are part of a multi-core processor;  
6 said multi-processor core including a plurality of processor cores.

1 31: (original) The method of claim 30, wherein the routing of said signals is selected from a  
2 group consisting essentially of coupling said test access ports substantially in series, coupling

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3 said test access ports substantially in parallel, and coupling said test access ports for substantially  
4 independent operation.

1 32: (original) The method of claim 31, wherein providing an indicator to identify a desired  
2 testing option comprises storing control information in a register.

1 33: (original) The method of claim 32, wherein storing control information in a register  
2 comprises shifting said data into the register in a serial fashion.

1 34: (original) The method of claim 32, wherein storing control information in a register  
2 comprises a step in compliance with the operation of test data registers as described in the IEEE  
3 1149.1 specification.

1 35: (original) The method of claim 30, wherein dynamically routing signals between a plurality  
2 of test access ports (TAPs) comprises dynamically routing signals between a plurality of test  
3 access port controllers (TAPCs) and a plurality of distributed data and control registers.

1 36: (original) The method of claim 30, wherein dynamically routing signals between a plurality  
2 of test access ports (TAPs) comprises only altering the routing of signals external to said  
3 plurality of processor cores.

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- 1 37: (original) The method of claim 30, which further comprises producing a signal that indicates
- 2 whether the output signals of said at least two processor cores' said one test access port (TAP)
- 3 are equivalent or substantially equivalent.